4105 & a

4105-a

Form 504

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

State: Cal

11—5613

DESCRIPTIVE REPORT.

Hyd. Sheet No. 4105

LOCALITY:

San Francisco Bay

Vicinity of Lime Pt.

and Fort Pt.

1920

CHIEF OF PARTY:

F. G. Engle

STATE:	California.
GENERAL LOCALITY:	San Francisco Bay.
LOCALITY:	~~Golden Gate~~ Vicinity of, Lime Point and Fort Point.
SURVEYED BY:	Shoreline, R.F.A.Studds.
	Hydrography, F.G.Engle.
CHIEF OF PARTY:	F.G.Engle.
VESSEL:	U.S.S.Watoma.
DATE:	March, 1920.
SCALE:	1 : 4,000.
PROTRACTED BY:	L.A.Eggert.
SOUNDINGS PLOTTED BY:	L.A.Eggert.

Soundings in feet at mean lower low water.

D E S C R I P T I V E R E P O R T.

HYDROGRAPHIC SHEET - FORT POINT and LIME POINT.

DEVELOPMENT - Scale 1/4,000.

This work was done in accordance with orders dated January 28, 1920, a copy of which is attached herewith.

The scale, limits, spacing of soundings, extent of shoreline run and other details on the sheet, such as transfer of contours from chart 5533, were adopted by conferring with the Chief Draftsman, City Engineer's Office, San Francisco. All available triangulation points in the vicinity were plotted upon the sheet and the identity of some of the natural unmarked objects was checked by plane table. Certain other signals listed below were located by plane table.

The soundings were taken from the 34 foot motor sailing launch, using hand leadline with 12# lead. This was desirable as the important depth curves to be determined were less than ten fathoms.

Each sounding was located by position angles, the launch being stopped at each sounding. It was found that the current was too strong to work except around slack water, and it was impossible to direct the lines from plotting. The endeavor, therefore, was made to run ranges, a rather difficult matter on account of the steep shores and strong currents and eddies.

Following is a list of those directly engaged:

R.F.A.Studds,Aid: Topography; plotting boat sheet.

F.G.Engle, H & G E: Steering and directing line by available ranges.

Fred L.Peacock, Jr.H & G E: Right angle.

L.A.Eggert, A.D: Left angle.

DESCRIPTIVE REPORT (continued).

DeW. C. Brown, W.O.1c:	Recording.
A.J.Lucier, Q.M.3c:	Leadsman.
R.L.Hoyt, Q.M.3c:	Leadsman.

A tracing showing shoreline, soundings, projection and suitable title was made and delivered to the City Engineer on March 16, 1920.

DESCRIPTION OF HYDROGRAPHIC SIGNALS DETERMINED BY PLANE TABLE.

Pile: The outermost pile at the northwest corner of the wharf to the eastward of Fort Point.

White: A prominent rock close outside the seawall and about 300 m. to the eastward of Fort Point.

Wash: A prominent rock close outside the seawall and about 300 m. to the eastward of Fort Point.

Flagstaff: The flagstaff on the fort at Fort Point.

Front Gable, Yellow House: The outer or northern gable of a large yellow house south east of and near the fort.

Flagstaff, Red House: A small flagstaff on a small red watch house high up on the hill above and south of the fort.

GOLDEN GATE, LIME PT.- FORT PT.

List of Plane Table positions.

Object	Latitude.	D.M.	Longitude	D.M.
		meters		meters
Pile	37 48	1051.2	122 28	220.4
White	37 48	1043.2	122 28	5368
Wash	37 48	L052.4	122 28	649.3
Flagstaff	37 48	1234.8	122 28	839.2
Front Gable yellow house	37 48	1113.6	122 28	783.6
Flagstaff red house	37 48	1014.0	122 28	853.2

Statistics sheet No.

Date, 1920	Letter	Volume	Positions	Soundings	Stat. Miles	Vessel
March 3	a	1	118	129	3.4	M.S.
" 4	b	1	127	127	4.5	M.S.
	Total		245	256	8.9	

ADDRESS THE SUPERINTENDENT
U. S. COAST AND GEODETIC SURVEY

AND REFER TO No. 41-EMK

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON

May 1, 1920.

Division of Hydrography and Topography:

Division of Charts:

Tidal reductions are approved in
1 volume of sounding records for

HYDROGRAPHIC SHEET 4105

Golden Gate, San Francisco Bay, Cal.
F. G. Engle in 1920.

Plane of reference is
Mean lower low water, reading

5.6 ft. on tide staff at Presidio Wharf.

Condition of records satisfactory.

L. P. Shidy

Acting Chief, Section of
Tides and Currents.

Forwarded:

Chief Div. of Hyd'y and Top'y

DIRECTOR
ADDRESS THE SUPERINTENDENT
U. S. COAST AND GEODETIC SURVEY

AND REFER TO No. 4-MFG

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

SECTION OF FIELD RECORDS.

Report on Hydrographic Sheet 4105. Surveyed in 1920.

Chief of Party: F. G. Engle. Surveyed by F.G. Engle, F. L. Peacock and A.F.A. Studds.

Protracted by: L. A. Eggert. Soundings plotted by L. A. Eggert.

Verified and inked by: H. E. MacEwen.

1. The records conform to the requirements of the General Instructions, except that in reducing no bottom soundings the usual symbol was omitted. Several soundings were questioned in the record by the field party, but no reason was given.

2. The plan and character of development fulfills the requirements of the General Instructions.

3. The plan and extent of development satisfies the specific instructions.

4. Some of the sounding line crossings are questionable. It is believed that the differences are due to the uneven rocky bottom rather than defective surveying.

5. The field plotting was completed to the extent prescribed by General Instructions.

6. In several places where the bottom is uneven the development was not close enough to enable the curves to be completely drawn.

7. The office draftsman did not have to do over again any part of the drafting done by the field party.

8. The 27 foot spot 280 meters north of Fort Pt. should have been further developed. Colbert's wire drag survey of 1917 failed to pass over this spot, and the previous survey (2285 of 1894) shows about 40 feet. It will be noticed that the spot is north of a line extending eastward from the buoy N 2 F P, and is therefore in the track of vessels passing close to the buoy.

9. Rating of the work: Character and scope of the surveying: Excellent.
Field drafting (quality): Excellent.

10. Reviewed by E. P. Ellis, October 13, 1920.

11. Two copies of this report to be sent to Division of Hydrography and Topography.

Section of Field Records

Sheet No. 4105 Surveyed 1920

Chief of Party - F. G. Engle.

Ground sufficiently well covered and work well developed

The Records conform to the requirements

Protracting good

Plotting good

H. E. Mac Emm

DIRECTOR
ADDRESS THE [redacted]
U. S. COAST AND GEODETIC SURVEY

AND REFER TO NO. 41/VFB

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON July 27, 1921.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
2 volumes of sounding records for

HYDROGRAPHIC SHEET 4105a.

Locality: Off Fort Point, San Francisco Bay, Cal.

Chief of Party: F. G. Engle in 1921.

Plane of reference is mean lower low water, reading

*5.6 ft. on tide staff at Presidio Wharf, San Francisco

Condition of records: Satisfactory.

*Allowance made for difference in tide at place of soundings.

Chief, Division of Tides and Currents.

4105a

Form 504

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

State: California

11—5613

DESCRIPTIVE REPORT.

Wire Drag

Hydro Sheet No. 4105a

LOCALITY:

San Francisco Bay

Off Fort Point

191

CHIEF OF PARTY:

4105a

Descriptive Report on Wire Drag Work
Investigation of 27' sounding off Fort Point.

1. This work was done in accordance with orders dated November 24th, Par. 6.

2. The boats available for the work were a 24' motor sailer, Navy Type, and a light 14' motor dinghy. As the ordinary type of drag with end buoys and long towlines could not well be handled with these small launches, a drag in which the end uprights are carried from the bows of the boats was constructed. The lift of the ground wire in this type above the actual length of the end uprights varies with the speed of the drag. The first drag was made of three 100' sections of sounding strand, using 60# end weights and two intermediate uprights 100' apart with 8# leads and 5 gal. can buoys. The uprights were made of 30' of sounding strand with an upper section of 30' of light rope graduated to fathoms up to 10 fathoms. It was estimated that with the motor sailer running dead slow, there would be a lift of four feet.

3. On January 31st the drag was set out near the last of the ebb tide, and a line was run over the position of the 27' sounding before a test of the drag was made. On February 19th a test of the drag was made in open water, by lowering a test lead line in the path of the drag at decreasing depths until the drag passed clear. This test was made by the Chief of Party at the test lead and a lift of 17' was found. Although the instructions were to run the motor sailer dead slow, the Chief of Party later discovered that the engineer speeded up his engine during the test in an effort to stem the tide in which the test was made. This was not discovered by the Chief of Party until the following day, when, on suspicion that the engines were not run dead slow, all hands were questioned and the fact admitted. The dinghy engine was also run at a higher speed during the test to keep abreast of the motor sailer. Another test of the drag was made on March 23rd, this time with engines dead slow, and a lift of 7' was found. This lift applied to the line run on January 31st, shows a clear depth of 30' M.L.L.W. over the spot under investigation.

4. It was decided however to rerun the line at first opportunity with another drag in which the uncertainty in the speed of engines would have less effect on lift and accordingly another drag was made using three 100' sections as before but with 90# end weights, 12# intermediate weights and the motor sailer towing a triangular sea anchor with seven Sq.ft area. This drag was tested on March 28rd. with engines run dead slow and showed a lift of only 0.7 ft. near end uprights and 1.7 ft. in middle. This drag was used in succeeding work, adopting a lift of 2 ft. On "b" day March 28th a line was run but was not well guided and grounded on the shoal water of the point. Some soundings shoaler than previously found were taken where the drag grounded. On "c" day, March 29th, a line was started too late and flood current was encountered. On "d" day the drag grounded to the eastward of the 27' spot. The leadline had on this day inadvertently been left on board ship and no soundings were obtained.

26' reduced in recomputation 28'

5. On "e" day the drag grounded in the vicinity of the 27' spot and the already known shoal water inshore. A least depth of 35' was obtained in the position of the 27' spot. On "f" day, a line was run over the spot with a depth of 28'. The results indicate that the 27' sounding was an error and that there exists at least 28' and not more than 36' at the position. The bottom is very uneven and is probably made up of boulders or uneven ledge. Fouling of lead was frequent and the drag was often broken in freeing it after grounding. No leads were lost however.

6. Conditions suitable for dragging were seldom presented. On account of the Fort Point buoy it was difficult to approach from seaward and the last of the ebb tide was required, as the velocity was then small whereas the first of the tide was of high velocity. There is considerable swell at this point and usually amounts to four feet or more. On the days on which work was done, the swell was small.

Respectfully submitted,

F. G. ENGLE,
H. & G. Engineer,
Commanding.

Organization of Party.

F. G. Engle, H & G Engineer, In charge, R ✓ and plotting motor sailer, soundings and test.

R. P. Eyman, H & G Engineer, L ✓)
M. E. Levy, H & G Engineer, L ✓) " "

R. F. A. Studds, J. H & G Engineer, In charge and R ✓ motor dinghy.
L. M. Geskind, J. H & G Engineer, L ✓ and recording, " "

U. S. S. N A T O M A
F. G. Engle, H&G Engr., Commanding

STATISTICS FOR WIRE DRAG.

Sheet: Investigation of 27'sounding off Fort Point.

Boat Uded: 34' Motor sailing launch - (guide)
" " : 14' Motor dinghy - (end)

Date 1921	Letter	Miles of drag line	Motor Sailer soundings	positions	angles	Motor Dinghy soundings	positions	angles
Jan. 31	A	0.6		20	40	11	29	58
Mar. 28	B	0.3	12	18	36		8	16
Mar. 29	C	0.2		5	10		8	16
May 23	D	0.3		7	14		8	16
May 24	E	0.1	10	16	32		7	14
May 25	F	0.3		7	14		8	16
May 26	G	Det. Sigs.				11	12	24
Totals:		1.8	22	73	146	22	80	160

Area dragged: 0.05 Sq. st. Mi.

ADDRESS THE DIRECTOR
U.S. COAST AND GEODETIC SURVEY

AND REFER TO No. 4-MEM

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
WASHINGTON

SECTION OF FIELD RECORDS

REPORT ON WIRE DRAG SHEET No. 4105[2]

Surveyed in 1921.

Chief of Party: F. G. Engle. Surveyed by F. G. Engle.

Protracted and verified by R. L. Johnston.

1. The object of this survey was to determine the least water on the 27 foot spot which is shown on Hyd. sheet No. 4105 and which depended on a single sounding obtained in that survey.

2. The records and the character of the survey fulfill the requirements of the General Instructions.

3. The plan and extent of the drag operations satisfy the specific instructions.

4. The drag was passed over the location of the 27 foot spot four times with effective depths of 30, 30, 31 and 26 feet.

5. In view of the fact that the depth of 27 feet is based on one sounding only without any additional indication of a shoal, the repeated failure of the drag to touch bottom indicates conclusively that the 27 foot sounding is erroneous and should be removed from the survey sheet and charts.

6. No further dragging is required within the area of this sheet.

7. The character and scope of the surveying are excellent.

8. Reviewed by E. P. Ellis, September, 1921.

From my examination of the records and report I believe that the existence of this rock has not been disproven. R.

Form 537
11—5812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.
Register No. W. D. — 4105 a

State . California . . . . . .
General locality San Francisco Co. Bay
Locality . . Off. Fort Point . . . . .
Chief of party . . . F. G. Engle . . . . . .
Surveyed by . . Field Party . . . . . .
Date of survey . . . 1921 . . . . . .
Scale . . . 1 : 4000 . . . . . .
Soundings in . . . . . .
Plane of reference . . . M. L. L. W. . . . . .
Protracted by . . . . . Soundings in pencil by . . . . .
Inked by . . . . . Verified by . . . . . .

Records accompanying sheet (check those forwarded):

Des. report, ... Tide books, ... Marigrams, ... Boat sheets,

..... Sounding books, ... Wire-drag books, ... Photographs.

Data from other sources affecting sheet . . . . . .

Remarks: